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ABSTRACT

During the 1983-84 academic year, a mathematics laboratory was established at Somerset County College to provide tutorial and testing services for high-risk students. This report describes and evaluates the first-year activities of the lab and proposes plans for increasing and evaluating the services and use of the lab during 1984-85. First, the report focuses on the initiation of the lab, the services provided, the successful elements of the math lab program, and problems encountered. Highlighted problems include the underutilization of tutor training in alternate forms of instruction, such as Keller's Personalized System of Instruction (PSI); and heavy student reliance on tutor/teacher explanations rather than audiovisual materials. Next, the report presents the plan for 1984-85, which includes workshops for teachers and students to increase awareness of the capabilities of the lab; teacher workshops on PSI; weekend workshops on special math topics; and the development of supplementary materials for various math courses. Next, plans for "seeding" a mathematics laboratory library of videotaped instructional material, computer-accessible resources, and teacher-developed audio-visual materials are presented; and the establishment of office space for the math lab coordinator is recommended. Finally, a research design for evaluating the lab in 1984-85 is presented including information on study questions, population and sample, variables, and analysis methods. Appendices include tutor salary information, the math lab schedule, and the floor plan proposed for the lab. (AYC)

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ED246968

MATHEMATICS LABORATORY REPORT

1. Activities during Academic Year, 1983-1984
2. Plans for Academic Year, 1984-1985

Submitted by:

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JC 840 441

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MATHEMATICS LABORATORY

ACADEMIC YEAR 1983-84

To provide service for "high-risk" students attracted by Somerset County College, the Mathematics Laboratory was initiated during the '83-'84 academic year. "High-risk" students may be defined as those with weak preparations and low basic skills levels, those who have returned to school after many years of absence to expand personal horizons, and those who have poor success rates in prior school settings.

Located in Room S-022, with the use of the South Learning Center equipped for individualized instruction and test taking, the Lab has been developed to the point allowed by availability of space, funds, instructional staff, course development, and construction limitations. Thus, the laboratory was "open" to all students in all courses on a "walk-in" basis for 16 hours and 40 minutes during the Spring semester and 9 hours during the Fall semester per week. Room S-022 was used as a classroom during other hours. (See Appendix for Schedule of Math Lab.) Through direct observation by tutors assigned to the "open lab hours", 80% of the students served were registered in Elementary Algebra/Arithmetic classes, 10% were registered in College Algebra, 5% were registered in Trigonometry and Technical Mathematics, and 5% were students who were registered in Chemistry and Physics. During the year, an average of 4.3 students per hour were tutored in the "open lab" by Math Coop tutors. (See Appendix for Tutor Payroll Accounting.)

Although an attempt was made

1. to accommodate diverse learning styles;
2. to provide teaching-learning options not available in the self-contained classroom;
3. to develop process skills and instructional skills using audio/visual materials and computers;
4. to provide opportunity for independent and self-directed study;

construction problems such as putting up shelves and security problems such as locks on doors made progress toward equipping the laboratory slow and frustrating. Also, due to the fact that many faculty are not trained in Keller's Personalized System of Instruction (PSI), the orientation/training of tutors to utilize alternate forms of instruction was not effectively utilized.

The Mathematics Laboratory program was successful in

1. training competent tutors for student assistance both in the classroom and laboratory settings.
2. providing supplementary drill, practice, and explanation for those students in Elementary Algebra/Arithmetic who were required to use tapes (both audio and visual) by instructor.
3. providing the review and drill material for students in College Algebra, Trigonometry, and Technical Mathematics as well as other disciplines who availed themselves of these laboratory services.

However, it was apparent that the audio/visual materials were under-utilized by students who relied on tutor/teacher explanations too heavily. In an effort to rectify this lack of independence and to develop more self-actualizing students, the following plans are suggested for developing the laboratory into a system which functions to serve mathematics needs for all disciplines in the college.

PLANS FOR 1984-85 MATHEMATICS LABORATORY UTILIZATION

I. PROGRAMS/COURSES:

1. Mathematics Laboratory Coordinator will conduct a faculty and tutor orientation on facilities, available materials, methods of teaching in a "systems" environment, etc. each semester to insure education of entire staff.

2. Workshops for Mathematics Faculty (and other interested faculty) assigned to teach Elementary Algebra and Arithmetic on the topic of PSI will be conducted on a continuing basis during the year by the Math Lab Coordinator. Visits to successful laboratories such as Burlington CC, Philadelphia CC, etc. will be arranged as well as "sharing sessions" with other developmental educators. These workshops should provide a forum for improving teaching techniques and avoid problems that result in academic isolation, professional stagnation, and "burnout". Coop students will take an active part in these workshops in addition to interested faculty.

3. Workshops for all students, run by lab personnel (coordinator and tutors) will be conducted at various times during the school year. These workshops are initiated at College Faculty request and attendance is required of said faculty's students. These workshops will be aimed at providing information to students on materials available in the lab that will upgrade skills/knowledge. Workshops will be publicized throughout college and will be open to all students.

   Weekend workshops, which will require a registration fee, will be conducted on various topics of interest to the college community as well as surrounding industrial/professional community.

   Topics might include solving word problems, factoring, functions, graphing, metric system, etc. which are taught in courses or supplementary topics such as linear programming, numerical techniques for differentiation and integration for computers, etc. which are not part of course curriculum but useful supplementary mini-topics.

4. College Algebra students will be provided with supplementary materials in the laboratory (audio/visual, computer, written study-sheets) to provide the additional work which is necessary for success in this course. Emphasis of the materials will be on word applications in order to improve cognitive skills and help in future college coursework.

Thus, the assumption that the college must provide whatever instruction is necessary to bridge the gap between a student's skills and knowledge at entry and those required to master the course material will be met. This material will serve to assist all students in all curricula when problems in advanced algebraic techniques are encountered throughout college career.

5. Repeat #4 for **Technical Mathematics** course. Thus, material for geometry, trigonometry, and metric system will be included in laboratory for use by all students. The technical applications which will be included in the supplementary material should be useful for industries in the community.

6. Repeat #4 for Statistics course. (**Continue** work started in Summer Session I '84.)

7. Nursing Mathematics module will be introduced into the Arithmetic sequence. Students who are not registered in Arithmetic will be allowed to utilize laboratory facilities for Nursing Module Study on a paid or unpaid, credit or non-credit, voluntary or non-**voluntary** basis dependent on the **Mathematics** Department, **Nursing** Department, and Administrators decisions.

8. As a first step toward implementing a uniform cooperative laboratory course for teaching Elementary Algebra and Arithmetic, a team-**teaching** effort with consenting faculty will be initiated as an experiment with modified "open-lab" teaching. The Mathematics Laboratory Coordinator will assist all faculty in **experiment** with administrative duties. An effort will be made to computerize all administrative functions by the Coordinator and Coop students.

II. MATHEMATICS LABORATORY LIBRARY "SEEDING": (in addition to materials developed above)

1. All workshops will be video-taped to establish a supplementary material section for use by students and surrounding community residents when needed.

2. A computerized file will be established to more easily gain access to all audio/visual, computer-software, written material, books, and mathematical models available for use in the **library**. This will be a Coop student's project or student-help work if the project **becomes** large. (Note: Student must be adept at **programming in BASIC**).

3. All consenting faculty will be asked to "donate" their **overhead**-projector course materials in order to establish an "Overhead-Projector Slide Library" for use by all faculty and tutors in lecture or discussion sessions. This library will be **catalogued** and updated in order to provide a source of explanatory **materials** to enrich lectures. Thus, lesson-planning will be **facilitated** for all teachers (especially adjuncts) leaving more free **time and energy for student contact on an individual** basis.

4. A computer-generated test program for use in the Mathematics Laboratory will be initiated to expand the test-bank for Arithmetic and Algebra individualized testing. This will improve security in test-taking and insure Mastery-Level Learning.

5. Math Lab Coordinator will actively pursue material from all sources (publishers, AMATYC Computer Committee, Conduit, etc.).

The Mathematics Laboratory Coordinator will be available to assist the faculty in their role as users of the audio/videc, computer, written, and other laboratory materials.

III. OFFICE SPACE FOR COORDINATOR IN MATH LAB:

In order for the Mathematics Laboratory Coordinator to perform his/her function as a facilitator for the instructor teaching in the laboratory, it is imperative that the Coordinator be available. This physical presence can be accomplished only if space is set aside for occupancy.

Thus, I would like to recommend that the area next to the screen in the small "noisy room" be partitioned further. This could be used by the Coordinator as "temporary headquarters" for implementing the above responsibilities.

1984-85 Mathematics Laboratory Evaluation

DESIGN OF EXPERIMENT FOR FALL, 1984

I. Questions to be answered:

1. Is the use of PSI, utilizing various alternate forms of instruction in a laboratory environment, better for our Basic Skills (Algebra and Arithmetic) courses than utilizing self-paced workbooks with tutoring, as is presently done?

2. Do the supplementary materials and tutoring help provided by the Math Laboratory for all students in the college level mathematics courses (College Algebra, Tech Math, Trigonometry, Statistics) increase learning? Also, should the 5 hour College Algebra section be dropped and replaced by required lab work?

II. Population and sample:

1. The population of interest is all students who will ever take Basic Skills at Somerset County College. We will use as our sample the students who are taught by the teachers agreeing to work in the team laboratory approach to the course.

2. The population of interest is all students who will ever take College Algebra (Tech Math, Trigonometry, Statistics) at Somerset County College. The sample will be the College Algebra (Tech Math, Trig., Stat.) students using laboratory facilities.

III. Experimental design:

1. A number of variables can affect student performance in a comparison. Differences can arise because of student aptitude, instructor abilities, time of day for the class, and a number of other variables. Although cognizant of these Hawthorne effects, the elaborate design that has students of all ability levels taking Basic Skills by both methods at all class hours is not feasible at this time. The writer is also aware that the teaching assignments should be balanced between the two methods, with each method carefully given the same mix of experienced and inexperienced instructors.

   Thus, the following stratified sampling technique will suffice for a first evaluation:

   a. Divide students into three strata: laboratory-taught, lecture taught, workbook taught.
   b. Take a simple random sample from each of the three groups (using a table of random numbers to select at least 30 students from each group).

   This procedure will ensure that no teaching method is missed. Such sampling enables us to determine the opinions of the separate groups.

2. The students in college level courses who avail themselves of the laboratory facilities will be counted and used as the sample.

IV. Variables for comparison:

A number of variables are important to students and faculty alike. The PSI method using laboratory facilities will be compared to other teaching methods using:

1. a common final examination to be given to students taught by the three methods. (Probably measure the differences between initial Basic Skills test and final Basic Skills test.)

2. records of student study time, to determine whether one method produced time savings.

3. measurements of instructor work time in the two methods.

4. a comparison of failure rates under the three methods.

5. a follow-up study of the success of the two groups of students in their next mathematics course.

6. a study of student and faculty attitudes toward the PSI laboratory method and the other two methods.

V. Analysis

Joan Capps will collect data, write questionnaires, and ensure that the experiment is run correctly. Once the experiment is finished, she will consult with Phil VanBlarcom and other members of faculty who are versed in statistical procedures.

Since the sample will be small, it seems likely that the Student-T test will be best. However, the Chi-Square Goodness of Fit test might be used, if we keep the sample size at least 30 and none of the expected values are too small. This decision will be made after the experimental data is examined at the end of the Fall semester.

APPENDIX

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MATHEMATICS LABORATORY TUTOR PAYROLL

ACADEMIC YEAR, 83/84

Fall, Spring Semesters

SEMESTER	TOTAL NUMBER OF HOURS	TOTAL EXPENDITURES
FALL	1, 004 $\frac{1}{3}$	$ 3, 124 . 94
SPRING	1, 131	$ 3, 711 . 24
TOTAL FOR ACADEMIC YEAR (Fall, Spring 83/84)	2, 135 $\frac{1}{3}$	$ 6, 836 . 18

Summer Sessions To Date, 1984

Mini - 6/19	64	$ 214 . 40

BALANCE SHEET

TUTORS.. SPRING, 1984

FINAL SUMMARY SHEET (I have kept bi-weekly dated records of individual Tutors)

* Work Study Deducted

TWO WEEK PERIOD			CUMULATIVE SUM FOR SEMESTER	
DATES	TOTAL HOURS	TOTAL PAY	TOTAL HOURS	TOTAL PAY
1/16-1/28	119	$ 398. 67	119	$ 398. 67
1/30-2/11	164½	543. 05*	283 ½	941. 72 *
2/13-2/25	144 ¾	474. 19*	428 ¼	1,415. 91 *
2/27-3/10	138¼	449. 75*	566 ½	1,865. 66 *
3/19-3/23	102 ¾	336. 20*	669 ¼	2,201. 86 *
3/26-4/7	167¼	549. 58*	836 ½	2,751. 44 *
4/9- 4/20	150½	490. 79*	987	3,242. 23 *
4/23-5/5	144	469. 01	1,131	$ 3,711. 24 *

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ACCUMULATION OF TUTOR HOURS PER 2 WEEK PERIOD

WITH SALARY INDICATED

Spring, 1984

NAME	1/16-1/28	1/30-2/11	2/13-2/25	2/27-3/10	Spring Recess 3/19-3/23	3/26-4/7	4/9-4/20	4/23-5/5	Total
	2½ hrs 8.38								2½ hrs $ 8.38
#		3 2.01	4 2.68	5 3.35	3 2.01	4 2.68	5 3.35	5 3.35	29 19.43
						18 60.30			18 60.30
*	12½ 41.88	25½ 85.43	23 77.05	31½ 105.53	11½ 38.53	17½ 58.63	19½ 65.33	18 60.30	159 532.68
*	23 77.05	24 80.40	20 67.00	20 67.00	4 13.40	27 90.45	20 67.00	26 87.10	164 549.40
*	21 70.35	22 73.70	18 60.30	21 70.35	12 40.20	19 63.65	21 70.35	23 77.05	157 525.95
	9½ 31.83	15½ 51.93	14 46.90	14 46.90	8½ 28.48	15½ 51.93	15 50.25	14 46.90	106 355.12
*	20 67.00	26 87.10	25 83.75	25½ 85.43	14¼ 47.74	27¼ 91.29	25½ 85.43	28½ 95.48	192 643.22
	4 13.40	13½ 45.23	14 46.90	11 36.85	11 36.85	14 3/4 49.41	17 56.95	17 56.95	102¼ 342.54
**	16½ 55.28	23 77.05							39½ 132.33
	10 33.50	12 40.20	9 3/4 32.66	10½ 35.18	5½ 18.43	10½ 35.18	10¼ 34.34	6½ 21.78	75 251.27
*			17 56.95	21¼ 71.19	11½ 38.53	13 3/4 46.06	17¼ 57.79	6 20.10	86 3/4 290.62
TOTALS	119 $398.67	164½ $543.05	144 3/4 $474.19	159 3/4 $521.78	81½ $264.17	167¾ $549.58	150¾ $490.79	144 $469.01	1,131 hrs $3,711.24

*Math Lab Co-op Student **Started Co-op then dropped course & tutoring #Work Study Student

BALANCE SHEET

TUTORS FALL, 1983/84

Two Week Payroll Summary.. 8/31/83-9/9/83 — Total Hours=72½ — Total Pay=$242.88

" " " " 9/12/83-9/23/83 — Total Hours for Stoffels = 12

" " " " 9/26/83-10/7/83 — Total Hours for Stoffels = 13; Total = $43.55
Total Pay = $487.14
Sum of Total Hours = 145 5/12

" " " " 12/5/83-12/12/83 — Total Hours for Stein = 3
Total Pay for Stein = 10.05
Corrected Totals = 80 11/12
257.69

Corrected Final Summary Sheet (I have copies of Two Week Payroll Summary Sheets for Individual Tutors)

Two Week Period			Cumulative Sum for Semester	
Dates	Total Hours	Total $	Total Hours	Total $
8/31-9/9	72½	$242.88	72½	$242.88
9/12-9/23	147 1/6	493.00	219 2/3	735.88
9/26-10/7	145 5/12	487.14	365 1/12	1223.02
10/10-10/22	142	475.70	507 1/12	1698.72
10/24-11/4	151 ½	507.53	658 7/12	2206.25
11/7-11/18	155 3/4	521.77	814 1/3	2728.02
11/21-12/2	109 1/12	356.31	923 5/12	3084.33
12/5-12/12	80 11/12	257.69	1004 1/3	3342.02
TOTAL	= 1,004 1/3	$3,342.02	No Work Study Deduction	
	Work Study 81 Hours @$3.35 @20%	- 217.08		
		APPROX. $3,124.94		

+ See note on page 2 of Accumulation of Tutor Hours Sheet :

"Rough Estimate" of Total Expenditure for Semester = $3,150.00

EXACT NUMBER OF HOURS WORKED BY TUTORS = 1,004 1/3 hours

Accumulation of Tutor Hours per Two Week Period Fall, 1983/84

NAME	8/31-9/9	9/12-9/23	9/26-10/7	10/10-10/22	10/24-11/4	11/7-11/18	11/21-12/2	12/5-12/12	Total
	2	20	38	50	70	91	117½	133	133 hrs $ 445.55
		5	10	15	20	25	27½	30½	30½ hrs $ 102.18
	19	43	74	99	129	160	182	202	202 hrs $ 676.70
		4							4 hrs $ 13.40
		6 1/6	13 5/6	22 5/6	31 5/6	41 5/6	45 11/12	48 7/12	48 7/12 hrs $ 162.75
		11	22	34	47	60	71½	75	75 hrs $ 251.25
	1	6½	11¼	18¼	25¼	31	35½	36¾	36¾ hrs $ 123.11
	7 3/4	17 3/4	28 3/4	39 3/4	54 3/4	69¾	81¼	87¼	87¼ hrs $ 292.29
		3½							3½ hrs $ 11.73
	27½	63½	95½	127½	158½	189½	212½	228	228 hrs $ 763.80
	2	4	5	6	8	10			10 hrs $ 33.50
		6	13	19					19hrs $ 63.65
		4	8	16	25½	35¾	39½	42½	42½ hrs $ 142.38

ACCUMULATION OF TUTOR HOURS PER TWO WEEK PERIOD FALL, 1983/84 page 2

NAME	8/31-9/9	9/12-9/23	9/26-10/7	10/10-10/22	10/24-11/4	11/7-11/18	11/21-12/2	12/5-12/12	TOTAL
	10	22	35	49	59	72	76	61	81 hrs Earned: $271.35 Paid Out Since Work Study $ 54.27
	¼								¼ hrs $ 10.89

TOTALS: 1,004 1/3 hrs

APPROXIMATE { Without Work Study $3,364.48 / With Work Study $3,147.45

+ Note: The Exact Figure available for Karen's Work-Study is not available, so deduction is approximate on both sheet accounting for discrepancy in BALANCE of ACCOUNTS

ROUGH ESTIMATE OF TOTAL EXPENDITURE FOR SEMESTER = $3,150.00
EXACT NUMBER OF HOURS WORKED BY TUTORS = 1,004 1/3 hours

OPEN LAB

MATHEMATICS LABORATORY SCHEDULE.. S022

SPRING, 1984

		MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY
1	8:00 8:50	64-010-1 HOELTER/ Dilley	64-011 LecI-2 KAZAKIA/ Thorne	64-010-1 HOELTER/ Dilley	64-011 LecI-2 KAZAKIA/ Thorne	64-010-1 HOELTER/ Dilley
2	9:00 9:50	Dilley	9:15 1:15 Thorne	64-011LECII-1 KOELLE/ Roll	9:15 9:15 Stein	64-011LECII- KOELLE/ Roll
3	10:00 10:50	Dilley	10:35 Konen	64-011LECII-2 KOELLE	10:35 Stein	64-011LECII- KOELLE/ Basile
4	11:00 11:50	Collins	10:35 64-011LECI-3 SOLEMAN/ Konen	64-011LECII-3 KOELLE/Collins	64-011LECI-3 SOLEMAN/ Stein	64-011LECII- KOELLE/ Collins
5	12:00 12:50	Collins	Rabbitz	64-011LECII-4 CAPPS/Collins	Dilley	64-011LECII- CAPPS/ Collins
6	1:00 1:50	Collins	64-010-6 FECCI/ Boudreau	64-011LECII-5 CAPPS/Collins	Dilley	64-011LECII- CAPPS/ Collins
7	2:00 2:50	64-010-7 WHITE/Collins		64-010-7 WHITE/Collins	64-010-6 FECCI/Rabbitz	64-010-7 WHITE/Collins
8	3:00 3:50	64-010-4 JAMHOURY/Rabbitz	Dilley	64-010-4 JAMHOURY/ Rabbitz	Rabbitz	64-010-4 JAMHOURY/ Rabbitz
9	4:00 4:50	Dilley	Dilley	Dilley	Rabbitz	CLOSED AT 4:00 on FRIDAY AFTERNOON
10	5:00 6:15	64-011LEC II-51 WILLIAMS/ Boudreau	64-011LECII-54 ANTHONY/ Boudreau	64-011LECII-51 WILLIAMS/ Thorne	64-011LECII-54 ANTHONY/ Rabbitz	
11	6:20 7:35	64-011LECII-52 JACKSON/ Boudreau	64-010-52 MUTER/ Boudreau	64-011LECII-52 JACKSON/ Thorne	64-010-52 MUTER/	
12	7:45 9:00	64-010-51 HOFFART/ Boudreau	64-011LECI-52 MUTER/ Boudreau	64010-51 HOFFART/Thorne	64011-LECI-52 MUTER/	
SATURDAY: 9AM-11:30AM			64-010-57 BAUER/Boudreau			

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MATHEMATICS LABORATORY SCHEDULE.....S022

OPEN

FALL, 83/84

	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY
8:00 8:50	HOELTER/Dilley	OPEN: Stephanie Collins	HOELTER/Dilley	OPEN: Sharon Rabbitz	HOELTER/Dilley
9:00 9:50	HOELTER/Dilley	8:35-9:50 KAZAKIA/ Collins	HOELTER/Dilley	8:35-9:50 KAZAKIA/ Rabbitz	HOELTER/ Collins
10:00 10:50	MAULDING/Dilley	OPEN: Karen Mangini	MAULDING/Dilley	OPEN: Karen Stoffels	MAULDING/Dilley
11:00 11:50	THOMPSON/ Dilley	10:35-11:50 MAULDING/ Mangini	THOMPSON/ Dilley	10:35-11:50 MAULDING/ Stoffels	THOMPSON/Sabky
12:00 12:50	MAULDING/ Mangini	OPEN Collins, Stephanie	MAULDING/ Mangini	OPEN Karen Stoffels	MAULDING/ Mangini
1:00 1:50	WHITE/ Sabky	1:00-2:50 ANGELL/ Rabbitz	WHITE/ Sabky		WHITE/ Rabbitz
2:00 2:50	GOETZLER/ Roll		GOETZLER/Stoffels	ANGEL/Rabbitz	GOETZLER/ Stoffels
3:00 3:50	GOETZLER/Konen	3:00-4:15 JAMHOURY/ Rabbitz	GOETZLER/ Rabbitz	3:00-4:15 JAMHOURY/ Rabbitz	GOETZLER/ Rabbitz
4:00 4:50	OPEN Ruth Dilley	4:20-5:00 OPEN: Sharon Rabbitz	OPEN Ruth Dilley	4:20-5:00 Sharon OPEN: Rabbitz	OPEN Ruth Dilley
5:00 6:15	WILLIAMS/Collins	ANTHONY/Rabbitz	WILLIAMS/Long	ANTHONY/Rabbitz	
6:20 7:35	HOFFART/Collins	TIBBITT/Konen	HOFFART/ Jones	TIBBITT/Rabbitz	
7:45 9:00	HOFFART/Collins	TIBBITT/Konen	HOFFART/ Jones	TIBBITT/ Long	

SATURDAY

9:00 11:30	LONG/DeHart

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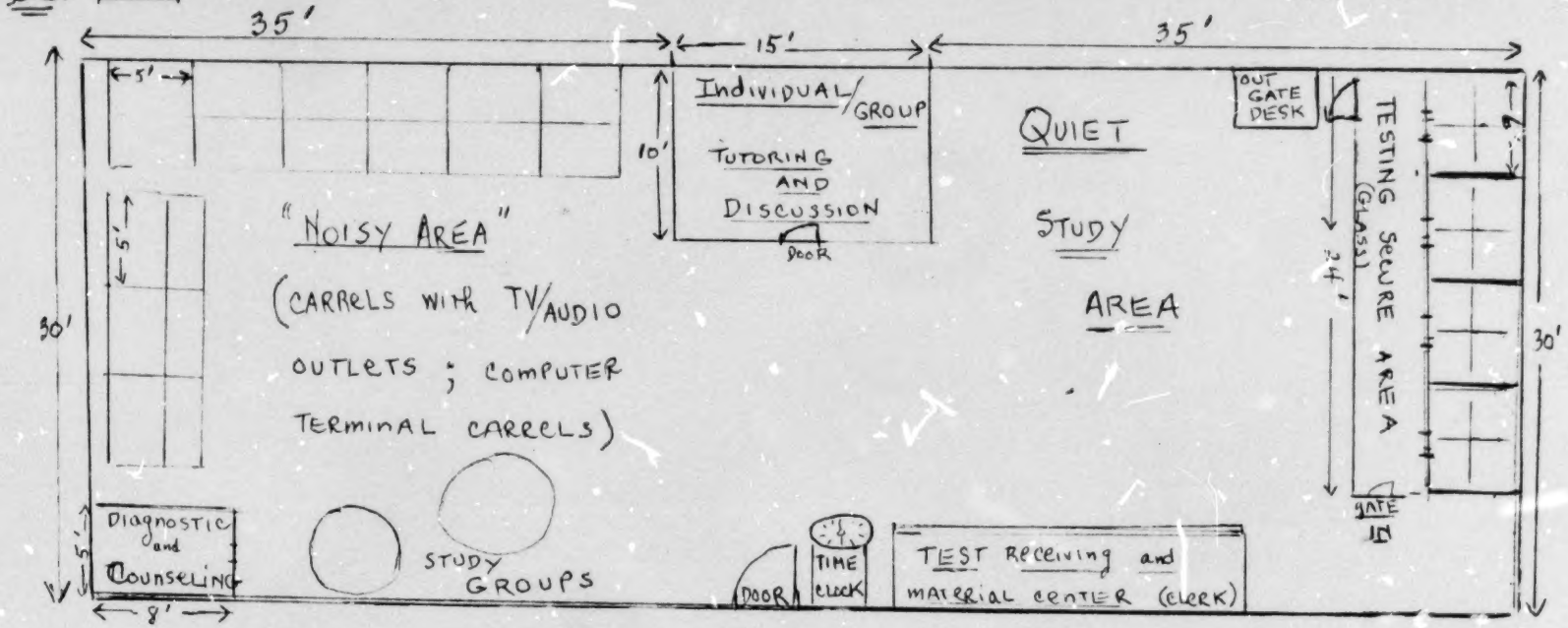
August, 1983



IDEAL MATH LAB [PLANNED TO Accomodate "WALK-IN" DEVELOPMENTAL MATHEMATICS (ELEMENTARY ALGEBRA, ARITHMETIC); UNITS in TECH MATH, STATISTICS, TRIGONOMETRY, ETC

Note: ① open space equipped with long TABLES and/or CARRELS; CHAIRS

② MUST be CARPETED with sound proof ceiling, walls

③ PARTITIONS AVAILABLE FOR ROOM SEPARATION

STAFFING:

① COORDINATOR / DEVELOPER

① FACULTY MEMBER EACH HOUR

③ TEST / MATERIAL DESK CLERK

④ AIDES:

Quiet Study: ① PARA-PROFESSIONAL (OUT-GATE Desk - collects and grades test assigns hours FOR counseling, DISCUSSION, ETC)

② STUDENT TUTOR

Noisy Area:

① STUDENT TUTOR FOR AUDIO/VISUAL; ② PARA-PROFESSIONAL FOR STUDY groups and counseling center

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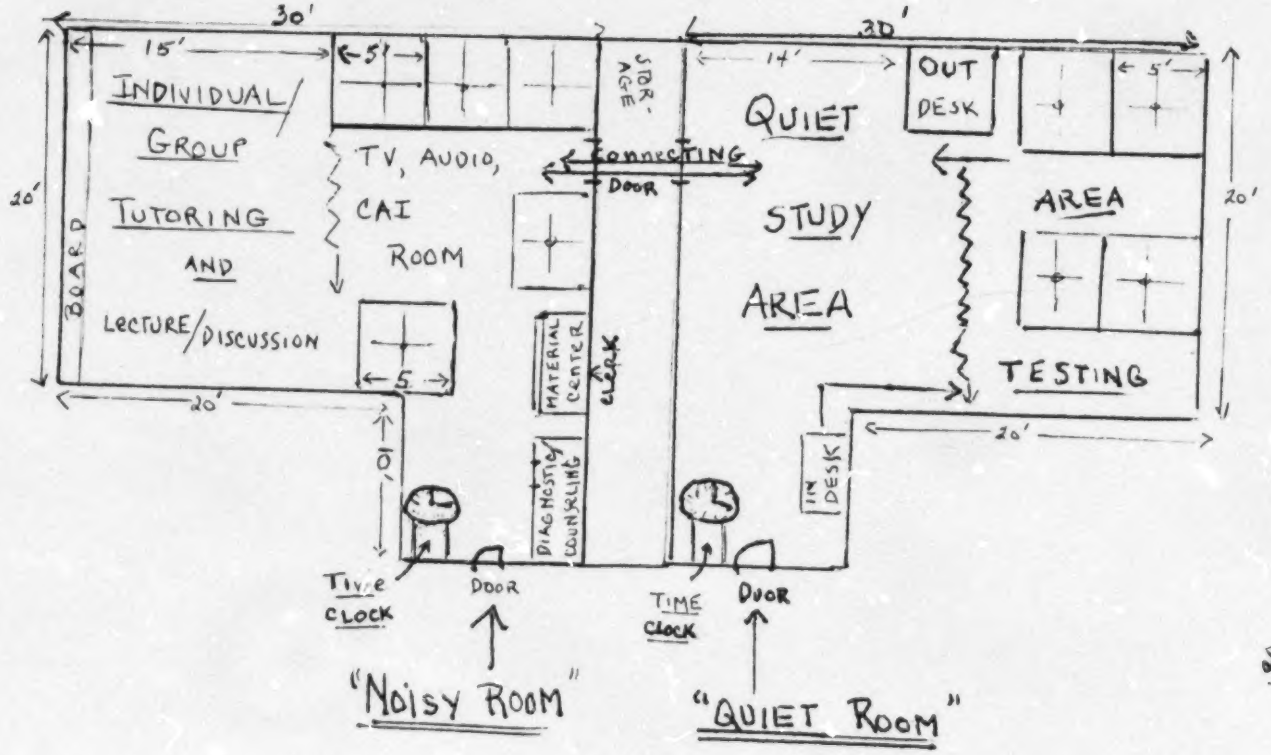
August, 1983



"MINIMUM LAB SPACE"

2 ADJOINING ROOMS

Note: the same TYPE OF ADMINISTRATION and STAFFING WOULD Be PRESENT WITH THIS LAB "WALK IN"

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ERIC Clearinghouse for Junior Colleges
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